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12 November 1965

MEMORANDUM FOR: George Carver, Vietnamese Affairs Staff

THROUGH: Director of Research and Reports
Chief, Economic Research
Chief, Resources and Industries Division
Chief, Fuels and Power BranchSUBJECT: Vulnerability of the Hanoi-Haiphong Electric
Power Network

1. As you indicated in your telephonic request of 10 November, the massive power failure in the northeastern part of the United States on 9 November 1965 raises a question of the vulnerabilities of the North Vietnamese electric power industry. Unfortunately, the cause of the New England failure is not yet known. It may have resulted from loss, during the peak load period, of significantly more power than anticipated in emergency plans. There may have been erroneous signals in switching gear, or indecision by load dispatchers. It probably would not be possible to produce the same chain-reaction, or cascading effect, in North Vietnam because the main power system is smaller and the load characteristics are different. Even if such an effect could be produced it would shut down the main power system for only a few hours at most.

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2. Destruction in the Hanoi-Haiphong area of 7 powerplants, or their associated substations, would virtually eliminate the supply of power to

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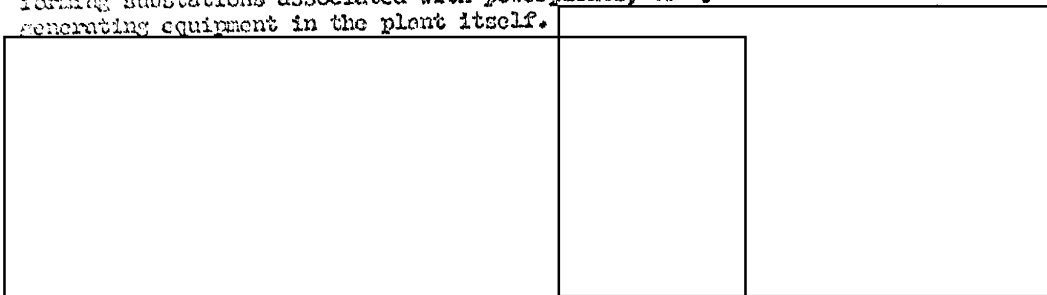
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3. Power supplies can be cut off either by destruction of transforming substations associated with powerplants, or by destruction of the generating equipment in the plant itself.

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4. Thus far US air strikes have been limited to five powerplants that make up only about 13 percent of the total national generating capacity. Four of the plants served relatively minor independent power systems. Air strikes against the fifth plant, located at Nam Dinh on the periphery of the Hanoi-Haiphong power network, were the first to involve a powerplant in North Vietnam's main power transmission network.

5. Attached for your information is a memorandum prepared last spring for the State Department. The assessment which it contains concerning the vulnerabilities of North Vietnam's electric power industry is still valid with the exception of the fact that the Nam Dinh powerplant was destroyed in August 1965.

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Attachment:
As stated

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CENTRAL INTELLIGENCE AGENCY

WASHINGTON 25, D. C.

7 APR 1965

MEMORANDUM FOR: Mr. Leonard Unger
Chairman, Vietnam Coordinating
Committee
Bureau of Far Eastern Affairs
Department of State
Washington, D.C.

SUBJECT: Location and Significance of Electric Powerplants
in the Hanoi-Haiphong Power Network of North
Vietnam

REFERENCES: 1. [REDACTED]
2. Memorandum to the Secretary, from W.W. Rostow,
Subject: An Electric Power Cut-Through in
North Vietnam, dated 1 April 1965

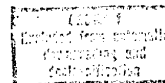
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1. Eight thermal electric powerplants in the Hanoi-Haiphong power network serve about 90 percent of North Vietnam's industry and about 15 percent of its population. Effective interdiction of the electric power supplied by these eight powerplants would bring to a halt modern industry and many municipal services in the area served by the Hanoi-Haiphong network. The exact locations of the eight powerplants are known from aerial photography. Destruction of substations in the network would interrupt all but a small amount of the power supply for six months; destruction of boiler houses at the eight powerplants would cut off supply from these powerplants for, probably, a year or two.

2. The present memorandum does not discuss the operational problem of whether the installations of the Hanoi-Haiphong electric power network can be hit in proper fashion, or the advisability of hitting these installations as a method of dissuading the North Vietnamese from pursuing their aims in South Vietnam. These subjects are not within the purview of economic intelligence.

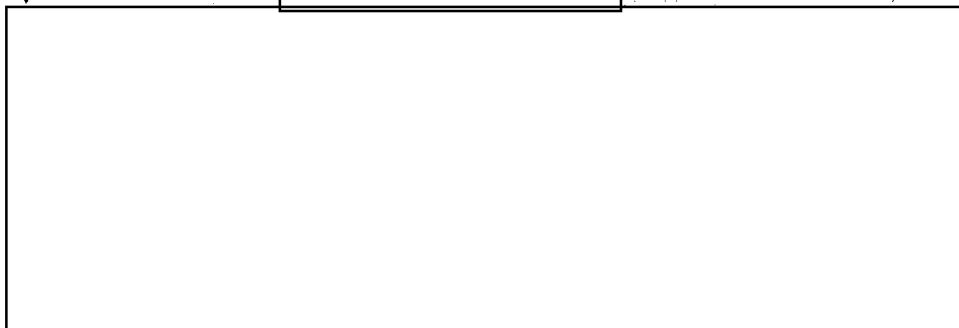
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connected to them. Effective interdiction of the eight powerplants would not only bring modern industry in the area to a halt but would also cause difficulties at the coal port of Cam Pha that relies to a great extent on electric-powered equipment. (The port of Haiphong is not extensively electrified.)

4. The Uong-bi, Hon-gay, and Thai Nguyen powerplants with about 46 percent of total grid capacity are located in relatively open areas, whereas the other five powerplants are generally in heavily populated areas.

5. The eight powerplants shown in Annex B contain 77 percent of the total powerplant capacity of North Vietnam, furnish about 80 percent of the electricity used by final consumers in the country, and about 90 percent of the electricity used by industry. About 90 percent of the power supplied to final consumers by the network is believed to be used for industry. (The term "final consumers" identifies all consumption except that by electric power generating plants. The term also excludes transmission losses.)

6. The major industrial consumers of electric power in the area are the Haiphong cement plant, coal mines in the Hon Gay area, the Thai Nguyen iron and steel plant, the Nam Dinh cotton textile plant, the Hanoi machine building plant, and the paper, chemical, and fertilizer plants near Viet Tri. Each of these enterprises is the major, if not the only, producer of its kind in the country.



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ANNEX B

Location, Capacity, and Significance of Major Thermal
Electric Powerplants in the Hanoi-Haiphong Power
Network of North Vietnam

| Name and Location a/ of Powerplant | Capacity (Megawatts) | User and Approximate Consumption in 1964 b/ (Million kilowatt-hours) |
|--|-------------------------|--|
| Haiphong TPP a/Cement (20-51-45N; 106-40-18E) | 12.0 | Haiphong Cement Plant 50 |
| Haiphong TPP (20-52-08N; 106-42-45E) | 5.5 | Town and Port of Haiphong 10 Agriculture in Haiphong area 5 |
| Hanoi TPP (21-02-28N; 105-50-51E) | 32.5 | Hanoi Machine Building Plant 20 Other industry in Hanoi 30 Non-industrial use in Hanoi area 30 |
| Hon Gay TPP (20-56-28N; 107-06-50E) | 15.0 | Coal mining in area 30 Coal part of Cam Pha 10 |
| Nam Dinh TPP (20-24-55N; 106-10-23E) | 7.5 | Nam Dinh Cotton Textile Plant 20 Town of Nam Dinh 5 |
| Thai Nguyen TPP (21-33-29N; 105-52-15E) | 24.0 | Iron and Steel Plant 20 Iron ore mines 10 Export to Hanoi 30 |
| Viet Tri TPP (21-17-48N; 105-25-10E) | 16.0 | Viet Tri Chemical Combine 10 Lam Thao Superphosphate plant 10 Viet Tri paper plant 10 |
| Uong Bi TPP (21-02-12N; 106-47-22E) | 24.0 | Hon Gay coal mines 10 Haiphong 10 Hanoi 40 |
| Total Network Capacity and Use | 136.0 | 360 |
| Total National Capacity and Use | 175 | 450 |
| Hanoi-Haiphong Network as a percent of Total National | 77 | 80 |